Florida

Session: 273. Transplant ID: Bacterial Infections
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Background: The use of haploidentitical or HLA mismatched unrelated donors permits allogeneic hematopoietic cell transplantation (HCT) in individuals with otherwise no donors available. Post-transplantcyclophosphamide(PTCy) is used for prevention graft-vs.-host disease (GVHD) in recipients of mismatched donors. We hypothesized that type and incidence of infectious complications following allogeneic HCT would vary according to the type of transplant.

Methods: We systematically assessed viral kinetics and reactivation rates for cytomegalovirus (CMV) in a prospective cohort of mismatched unrelated donor (MMUD) HCT recipients who had PTCy at our center (April 2017–March 2019). In addition, we evaluated the incidence of invasive aspergillosis (IA), invasive candidiasis (IC), bloodstream infection (BSI), pneumonia, *Clostridium difficile* (CDI), and community-acquired respiratory virus. Haploidentical donor and anti-thymocyte globulin (ATG) treated MMUD recipients were served as historical control groups.

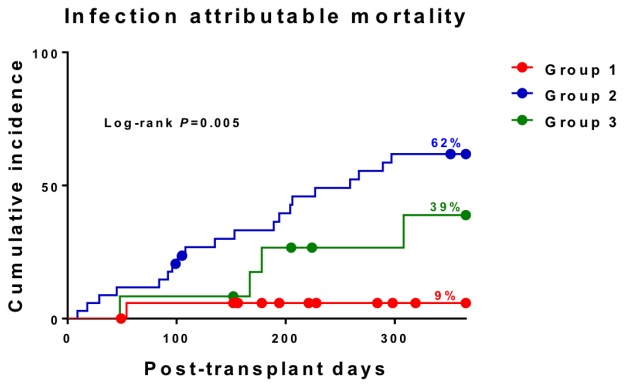
Results: A total of 81 patients were analyzed in 3 groups (Table 1): PTCy MMUD (group 1; $n = 22$), ATG MMUD (group 2; $n = 40$) and haploidentical (group 3; $n = 19$). Whereas the 1 year incidence of CMV viremia was similar across groups, the rate of clinically significant (requiring preemptive therapy) CMV viremia was lower in group 1, compared with groups 2 and 3 (18 vs 53%; $P = 0.02$). The 1 year incidence of CDI was 47% in group 3 vs. 18% in groups 1 and 2 ($P = 0.01$). There was no significant difference in the incidence of IA (5–18%), pneumonia (30–42%), BSI (32–55%) and CARVs (28–53%) between groups. There were no cases of IC in this cohort. 1 year infection attributable mortality was lower in group 1 (figure), compared with groups 2 and 3, (9%, 62% and 39%, respectively; $P = 0.005$).

Conclusion: Compared with ATG MMUD and haploidentical donor, PTCy MMUD HCT was associated with lower incidence of clinically significant CMV and lower infection attributable mortality. These findings might be related to the contemporary prophylactic strategies used in this patient population. Larger studies are needed.

Table 1.

Variable	All patients (n=81)	Group 1 (n=22)	Group 2 (n=40)	Group 3 (n=19)	P value†
Age, yr, median (IQR)	55(43-63)	60 (51-65)	55 (41-63)	48 (46-57)	0.26
Male Sex, n(%)	35 (43)	9 (41)	16 (40)	10 (53)	0.64
Ethnicity					
Hispanic/Latino	51 (63)	15 (68)	23 (58)	13 (68)	0.68
Non-Hispanic/Latino	13(16)	7 (32)	17 (43)	6 (32)	0.69
Race					
White	64 (79)	18 (82)	30 (75)	16 (84)	0.78
Follow-up, Post-HCT d, median (IQR)	224 (134-411)	228 (153-357)	243 (101-455)	217 (150-357)	0.96
Underlying diagnosis n(%)					
Acute myeloid leukemia	30 (37)	9 (41)	14 (35)	7 (37)	0.69
Acute lymphoblastic leukemia	8 (10)	6 (27)	5 (13)	2 (11)	0.28
Myelodysplastic syndrome/MPN	5 (6)	3 (14)	11 (28)	0 (0)	0.02
Non Hodgkin lymphoma	6 (7)	2 (9)	4 (10)	4 (21)	0.51
Others	32 (40)	2 (9)	6 (15)	6 (32)	0.16
Conditioning regimen					
Bu/Cy/ATG	3 (4)	0 (0)	3 (8)	0 (0)	0.43
Cy/TBI/Post Tx Cy	3 (4)	3 (14)	0 (0)	0 (0)	0.03
Flu/Bu/ATG	17 (21)	0 (0)	17 (43)	0 (0)	< 0.01
Flu/Bu/Post Tx Cy	18 (22)	11 (50)	0 (0)	7 (37)	< 0.01
Flu/Cy/TBI/ATG	1 (1)	0 (0)	1 (3)	1 (5)	0.49
Flu/Cy/TBI/Post Tx Cy	8 (10)	7 (32)	0 (0)	0 (0)	< 0.01
Ful/Mel/ATG	12 (15)	0 (0)	12 (30)	0 (0)	< 0.01
Ful/Mel/Post tx Cy	4 (5)	1 (5)	0 (0)	3 (16)	0.02
Ful/Me/Tt/Post tx Cy	1 (1)	0 (0)	0 (0)	1 (5)	0.23
Flu/Mel/TBI/Post tx Cy	5 (6)	0 (0)	0 (0)	5 (26)	< 0.01
R/Flu/Mel/ATG	2 (2)	0 (0)	2 (5)	0 (0)	0.73
TBI/Cy/ATG	1 (1)	0 (0)	1 (3)	0 (0)	1.0
TBI/Etoposide/ATG	4 (5)	0 (0)	4 (10)	0 (0)	0.18
TBI/Flu/Post tx Cy	1 (1)	0 (0)	0 (0)	1 (5)	0.23
Others	1 (1)	0 (0)	0 (0)	1 (5)	0.23
Stem cell source					
PBSC	49 (60)	2 (9)	30 (75)	17 (89)	< 0.01

Figure 1. Infection attributable mortality



Disclosures. **All authors:** No reported disclosures.

2661. Sarcopenia Increases Risk of Post-Surgical Infections in Kidney Transplant Recipients

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Background: Sarcopenia (reduced skeletal muscle mass) has been associated with serious infection in liver transplant recipients. We analyzed the association of sarcopenia and early post-surgical infections in kidney transplant recipients.

Methods: Retrospective cohort study of 125 patients underwent kidney transplantation from 2010 to 2014 at University of Kentucky Medical Center. Sarcopenia was diagnosed by measuring the skeletal muscle mass on computed tomography imaging obtained during the pre-transplant evaluation using SliceOmatic 5.0 software at L3 level (≤ 52.4 cm^2/m^2 in males and ≤ 38.5 cm^2/m^2 in females). Early post-transplant infections were confirmed by positive culture from blood, urine, and/or peritoneal fluid within 30 days after kidney transplantation. A generalized linear model (GLM) was used to identify variables predictive of post- surgical infection and Risk Ratio (RR) was obtained, with a P-value of < 0.05. The statistical analysis was performed with STATA version 12.0 (College Station, Texas).

Results: Among 125 patients, 52 (41.6%) were identified with sarcopenia, 110 (88.0%) patients were white, 76 (60.8%) male, with a median age of 56 (range 20–72) at the time of transplant. Diabetes was reported in 50 (40.0%) patients, obesity in 64 (51.6%) patients and smoking in 43 (34.6%) patients. Six (4.8%) patients had graft failure. Infections were identified in 22 (17.6%) patients, more than one source of infection was reported in 4 (3.2%) cases. The most common infections were urinary tract infection in 13 (10.4%) patients and bacteremia in 5 (4.0%) patients. The median time to development of infection was 9 days (range 1–27). In the bivariate analysis, sarcopenia was associated with high risk of post-surgical infections (RR 2.45; 95% CI 1.10–5.44). In multivariable analysis, sarcopenia was a significant independent predictor of infection (RR 2.58; 95% CI 1.20–5.52). None associations were found with other variables; age over 40 years, male sex, smoking, obesity and diabetes.

Conclusion: Our study suggested that sarcopenia was associated with an increased risk of early post-surgical infection in kidney transplant recipients.

Table 1: Factors associated with early post-surgical infections in kidney transplant recipients

	Infection	Non-infection		Bivariate Analysis			Multivariate Analysis		
	(n=22)	(n=103)	p-value	RR	95% CI	p	RR	95% CI	p
Age < 40 years old	20 (90.9%)	83(80.5%)	0.360	2.13	0.53-8.52	0.283	1.52	0.36-6.42	**0.568**
Male	14(63.6%)	62 (60.1%)	0.814	1.12	0.50-2.49	0.766	0.90	0.41-1.96	**0.802**
Race, white	20 (90.9%)	90 (87.3%)	1.000	0.733	0.18-2.84	0.654			
Smoking	7 (31.8%)	36 (35.2%)	0.810	0.87	0.38-1.99	0.758	0.90	0.40-2.02	**0.816**
Diabetes	9 (40.9%)	41 (339.8%)	1.000	1.03	0.47-2.25	0.924	1.01	0.47-2.15	**0.970**
Obesity	11 (50.0%)	53 (51.9%)	1.000	0.93	0.43-2.00	0.868	1.20	0.53-2.70	0.650
Sarcopenia	14 (63.6%)	38 (36.8.4%)	0.031	2.45	1.10-5.44	0.027	2.58	1.20-5.52	**0.014**
Deceased-donor	18 (81.8%)	77 (74.7%)	0.590	0.70	0.25-1.92	0.494			
Hypoalbuminemia	13(59.0%)	61 (59.2%)	1.000	0.99	0.45-2.15	0.991			

Table 2: Microorganisms associated with infections among patients undergoing kidney transplantation

Bloodstream infection	**N=8**
Candida parapsilosis	1
Escherichia coli	1
Enterococcus faecalis	1
Enterococcus faecium	1
Staphylococcus epidermidis	3
Pseudomonas aeruginosa	1
Urinary tract infections	**N=17**
Candida krusei	1
Candida glabrata	3
Escherichia coli	3
Enterobacter aerogenes	1
Enterobacter hormaechei	1
Enterococcus faecalis	2
Enterococcus faecium	1
Klebsiella pneumoniae	1
Pseudomonas aeruginosas	1
Staphylococcus epidermidis	2
Staphylococcus spp	1
Peritonitis	**N= 3**
Escherichia coli	1
Group B streptococcus	1
Enterococcus faecalis	1

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2662. Methenamine Hippurate Decreases the Incidence of Urinary Tract Infections in Adult Renal Transplant Recipients

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Background: Urinary tract infections (UTIs) are a common complication of renal transplantation. Methenamine hippurate is a non-antibiotic alternative that reduces